



**CLEAN DEVELOPMENT MECHANISM
SMALL-SCALE PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM
(CDM-SSC-PoA-DD) Version 01**

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NOTE:

- (i) This form is for the submission of a CDM PoA whose CPAs apply a small scale approved methodology.
- (ii) At the time of requesting registration this form must be accompanied by a CDM-SSC-CPA-DD form that has been specified for the proposed PoA, as well as by one completed CDM-SSC-CPA-DD (using a real case).



SECTION A. General description of small-scale programme of activities (PoA)

A.1 Title of the small-scale programme of activities (PoA):

CarbonSoft Open Source PoA, LED Lighting Distribution: Pan Africa
Version: 8
Date: 09/01/2013

A.2. Description of the small-scale programme of activities (PoA):

CarbonSoft Corporation (“CarbonSoft”) supports the development of purpose-designed, renewable energy charged, LED/CFL lamp distribution Projects. These Projects will specifically replace existing and predominant use of kerosene-based lighting with purpose designed LED/CFL lamps.

Off-grid renewable lighting solutions offer a compelling and game changing market opportunity to reduce greenhouse gas (“GHG”) emissions and improve quality of life. CarbonSoft’s partners are seeking to distribute the lowest-priced solar lamp products to low-income families. This can only be achieved through the additional financial benefits leveraged from accessing the CDM and the carbon market.

1. General operating and implementing framework of PoA

According to the recent “From Carbon to Light” report one quarter of humanity continues to obtain illumination by burning fossil fuels, which is estimated to generate 190 million tonnes of carbon dioxide (“CO₂”) per year¹.

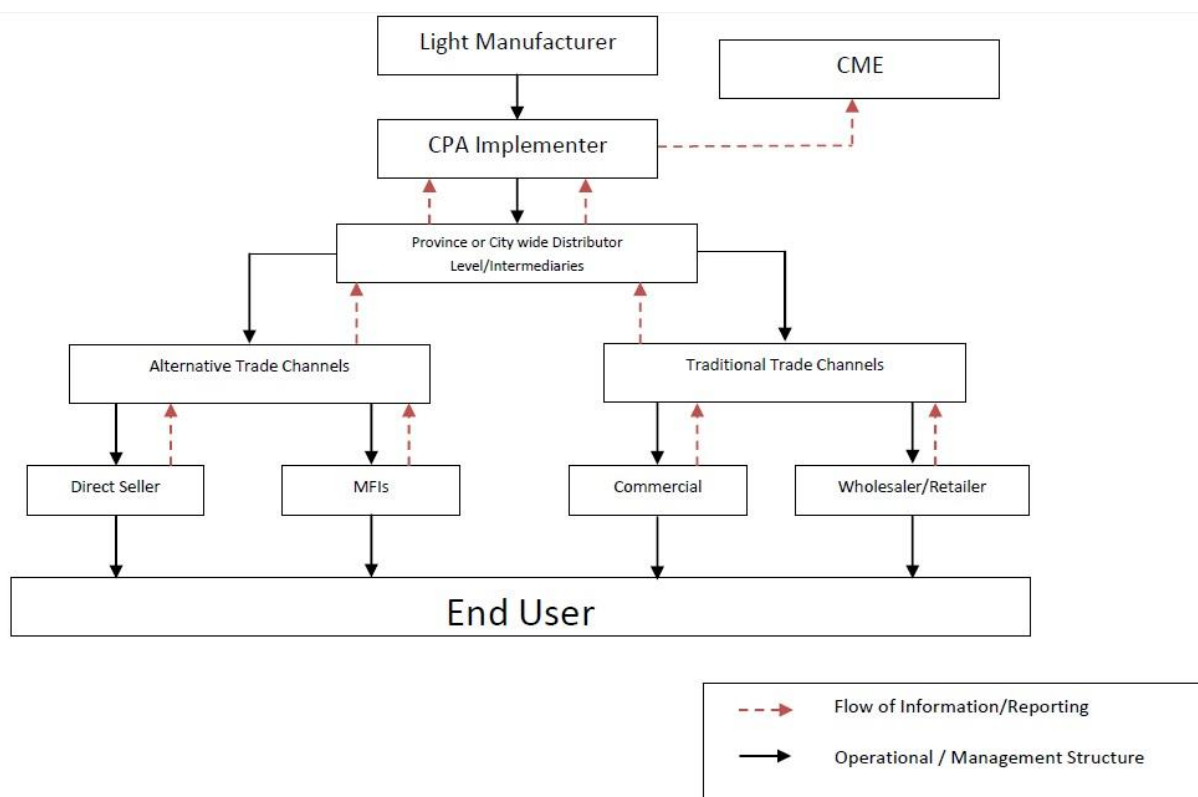
Undertaking approved activities as described in this PoA, will create the opportunity for people using kerosene for lighting to access and obtain high quality, low cost lighting solutions that meet the quality standards specified in AMS.III.AR.

Qualifying ‘Project Lamps’ consist of at least one Light Emitting Diode (“LEDs”) or Compact Fluorescent Lamps (“CFLs”) that provide high quality, long-life and consistent luminosity. The lighting source is connected to a rechargeable battery, which is in turn connected to an energy source such as a photovoltaic (“PV”) panel. In practical terms an LED is a semiconductor diode that emits light when an electrical current is applied. LEDs are ideal for rural lighting purposes due to their efficiency, long lifetime, and ruggedness and associated low maintenance costs.

¹ <http://light.lbl.gov/pubs.html>. Accessed September 2011



Process flow for a generic CPA Project:



Project lamps will be distributed through in-country distribution companies, or through other, independent Distribution Partners. The companies/partners will be responsible for the implementation of one or more CPAs. These companies / Partners together referred to as CPA entities, will distribute project lamps directly to end-users via one or more distribution mechanism as follow:

A. Direct Selling

Under this distribution mechanism, the CPA Implementer can distribute project lamps directly to consumer away from a fixed location. Modern direct selling includes sales made through the party plan, one-on-one demonstrations, and other personal contact arrangements. It can be demonstrated as "The direct personal presentation, demonstration, and sale of products and services to consumers, usually in their homes or at their jobs.

B. Indirect Selling

Under this mechanism, the CPA Implementer can distribute project lamps by a manufacturer to a service merchandiser or other wholesaler, who in turn sells the products to chain store companies or independent stores and then to end user/consumer.

2. Policies and measures of the stated goal of the PoA



The CME of the PoA will develop and coordinate project developers to replace kerosene-based lighting with approved Project Lamps across countries in Africa. The implementation of the PoA will have the following impacts:

- **Cost savings:** by replacing kerosene, families may have more available income to spend on their welfare priorities such as education, medicine and food
- **Energy Conservation:** by using LED/CFL lights, kerosene is saved. The batteries will be charged by renewable energy sources, such as solar power, and will hence lead to energy conservation
- **Job creation:** the supply, storage, distribution and maintenance (including battery renewal) of Project Lamps may stimulate the creation of new employment opportunities across the region of the CPA
- **Clean-energy education:** the promotion and use of LED/CFL lamps that use renewable sources of energy for charging may enable families to experience sustainable development in a tangible way that can positively affect their lives. Incorporating the management and maintenance of LED/CFL lamps utilizing clean energy in a household will provide direct education
- **Improved education environment:** The use of LED lamps has been recognized to promote improved learning conditions that in turn favour increased literacy. Whilst official data is not available for countries in the African region, one study focused on Indian homes claims that average study time of students rose from 1.47 hours to 2.71 hours per day², with a positive effect on school performance
- **Improved health and safety:** human deaths and physical burns are commonly associated with the use of flame-based domestic appliances. Reduction in the use of kerosene may contribute to the prevention of such domestic accidents and will also reduce indoor air pollution

3. Confirmation that the proposed PoA is a voluntary action by the coordinating/Coordinating/Managing Entity

The proposed PoA is a voluntary action by the private group, CarbonSoft Corporation Limited as Coordinating /Managing Entity (CME) of the PoA.

Expansion of PoA:

The Republic of Malawi is the first country in the *CarbonSoft Open Source PoA, LED Lighting Distribution: Pan Africa*. In the future, the CME intends to include all countries on the continent of Africa into the PoA.

The project participants may choose to include more countries under the PoA, post registration. This is within the guidelines prescribed by the EB in Paragraph 6, Annex 26 of the EB 60 report³.

² <http://light.lbl.gov/pubs/tr/lumina-tr5.pdf>

³ http://cdm.unfccc.int/Reference/Guidclarif/PoA/poa_guid06.pdf



In case the project participants decide to further more add countries under the PoA post registration, they will make sure the following guidelines are met:

- 1) *The existing registered PoA design document (POA-DD) is revised to reflect the changes, in particular, the eligibility criteria for inclusion of CPAs;*
- 2) *A designated operation entity (DOE) confirms that the baseline established in the POA-DD is applicable to the extended programme boundary; and*
- 3) *The DNA of the new Host Party issues a letter of approval for the programme and a letter of authorization for the coordinating and managing entity.*

A.3. Coordinating/managing entity and participants of SSC-POA:

The contact details are listed in Annex 1.

Name of Party involved (*) ((host) indicates a host Party)	Private and/or public entity(ies) Project participants (*) (as applicable)	Kindly indicate if the Party involved wishes to be considered as Project participant (Yes/No)
Malawi (host)	CarbonSoft Corporation Ltd	No

A.4. Technical description of the small-scale programme of activities:

A.4.1. Location of the programme of activities:

The geographical boundary of the PoA is Africa.

A.4.1.1. Host Party(ies):

Republic of Malawi

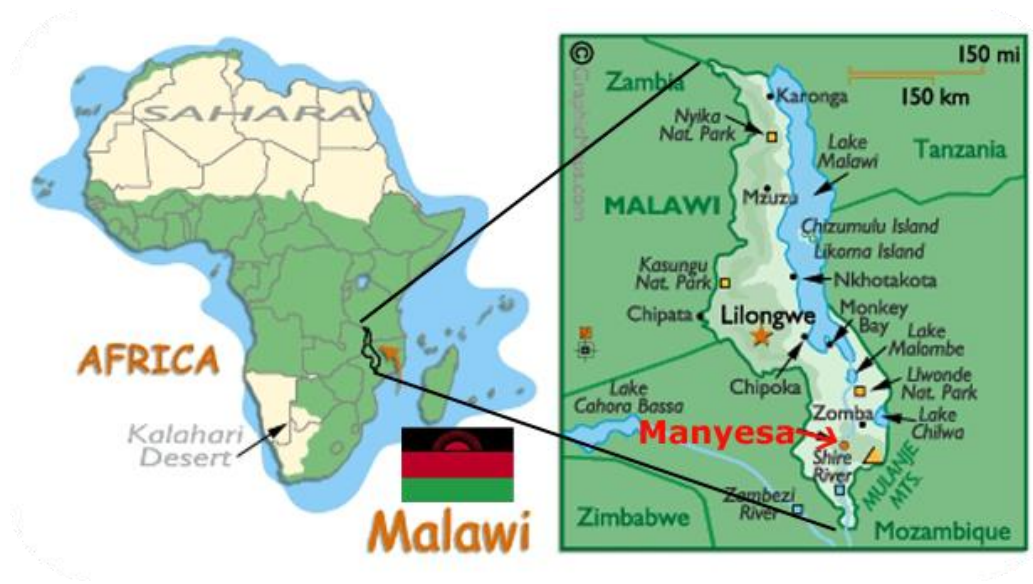
A.4.1.2. Physical/ Geographical boundary:

The political boundary of Malawi is chosen as the country /geographical boundary of SSC-PoA. The SSC-CPAs that will be included under the SSC-CPAs that will be included under the SSC-PoA will be within the defined geographical location of the SSC-CPA and follow applicable national and/or sectoral policies and regulations. However, there are no policies or regulations on switching fossil fuel based lighting with LED lighting system in the Malawi, which are relevant to the PoA. There are no such policies in the Malawi, which are relevant to the PoA.

Malawi is a landlocked country in southeast Africa, bordered by Zambia to the northwest, Tanzania to the northeast and Mozambique to the south, southwest and southeast. It lies between latitudes 9° and 18° south and longitudes 32° and 36° east.



Figure 1: Geographical boundary of the PoA



A.4.2. Description of a typical small-scale CDM programme activity (CPA):

A typical CPA Project will represent a specific region (up to the boundary of an entire country) up to a maximum volume of 60,000 tonnes of CO₂, per year, as per the methodology.



The CPA shall demonstrate that replacing traditional kerosene lamps with Project Lamps can reduce greenhouse-gas emissions and improve the quality of life for families. These may include:

- lower household costs by reducing the need to buy kerosene;
- reduced pollutants created in the home; and
- less danger of household fires.

The benefits of replacing kerosene lamps with a renewable equivalent are tangible. US Department of State research reports for African countries show that the average per capita income in these countries is very low. For example, the per capita income in Malawi is \$280 per annum⁴, in Ethiopia it is \$365⁵ and \$465 per annum in Mozambique⁶. In Zimbabwe, the per capita income in 2010 was \$460.⁷ According to a study carried out in Malawi, the average household spent \$2.61 per month on kerosene for lighting.⁸

The financial benefit earned from the sale of Certified Emission Reductions (“CERs”) enables the project developer to reduce the unit price of the Project Lamps to ensure they are affordable and obtainable to low-income households in Africa.

“From Carbon to Light” estimates that 1.5 billion people lack access to electricity, and therefore a reliable source of lighting. Around 85% of those people are based in rural areas, mainly in Sub-Saharan Africa and South Asia.

Each CPA must adhere to the requirements as described in this PoA.

A.4.2.1. Technology or measures to be employed by the SSC-CPA:

The Project will see the distribution of LED/CFL lamps to households across the countries involved in the African PoA. Applying the simplified modalities and procedures for small-scale CDM Project activities, each CPA Project falls under the following type:

- Type III: Other Project Activities
- Category III.AR: Substituting fossil fuel based lighting with LED/CFL lighting systems (Version 03.0)
- Sectoral Scope: 1 (Energy industries (renewable - / non-renewable sources))

Portable and ambient lighting technology

A typical Project Lamp consists of solar panel that converts solar energy directly into electricity by the photovoltaic effect. A brief description of the components of a typical solar LED lamp is given below:

⁴ <http://www.state.gov/r/pa/ei/bgn/7231.htm>

⁵ <http://www.state.gov/r/pa/ei/bgn/2859.htm>

⁶ <http://www.state.gov/r/pa/ei/bgn/7035.htm>

⁷ <http://www.indexmundi.com/facts/zimbabwe/gni-per-capita>

⁸ Off-grid energy services for the poor: Introducing LED lighting in the Millennium Villages Project in Malawi.

- *Solar Panel*: It uses photovoltaic technology to convert solar energy into electricity. It could be a separate unit or integrated with the lamp;
- *Luminary*: It will be using LED as a light emitting source;
- *Electronics*: Electronic circuitry will be present to control the charging, discharging of the battery, driving the luminary with the right voltage/current;
- *Battery*: The battery will be charged by the solar panel during the day and this stored energy will be used to drive the luminaries.

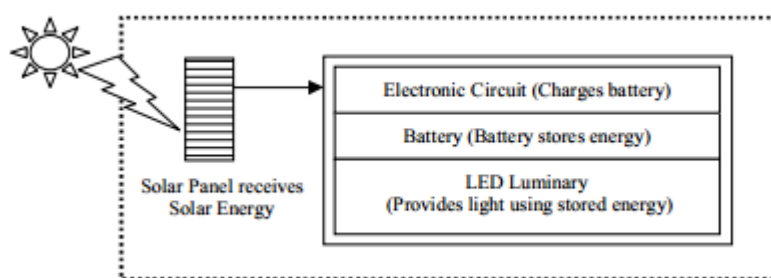


Figure 2: Block diagram of a typical solar LED lamp

Each CPA Project will potentially involve the distribution of a range of lighting products that meet the quality requirements stipulated in AMS.III.AR.

Project Lamps selected by the CPA Project developer shall meet the following technology requirements as per AMS.III.AR version 03.0:

- LED or CFL based lighting systems shall be used for residential and non-residential applications including ambient lighting, task lighting and portable lighting
- Project Lamps shall have batteries that are charged using:
 - Charged by renewable energy systems included as part of the Project Lamp (e.g., photovoltaic systems or mechanical systems such as hand crank charger)
- At a minimum, Project Lamps, shall be certified by their manufacturer to have a rate average life of at least 5,000 hours (if the CPA goes with Option 2, the lamp must have an average life of 10,000 hours)
- Manufacturer certification that the Project Lamp's battery charging efficiency, at the time of the purchase, is at least 50%
- Project Lamps shall have a minimum of a one year warranty
- Each lamp must have:
 - a luminous flux of 20 Lumens, or
 - an illuminance of 25 Lux over an area greater than or equal to 0.1 metre sq when suspended at a distance of 0.75 metres or self supported.

Development and improvements in portable and ambient lighting technology is expected to lead to a general reduction in the cost of products and increasing quality. Therefore, over the lifetime of the PoA



and each CPA Project the technical features of Project Lamps are expected to improve with time. Although, solar products are entering the African market, the technology has yet to be substantially distributed and, therefore, has not yet reached rural areas. Therefore, the Project involves the transfer of new, clean-technology products to the region. However, it is not anticipated that there will transfer of manufacturing technology under this PoA.

Implementation of CPA Projects, with the carbon finance support of the CDM, will create real, rapid and affordable product transfer that directly and positively affects families across Africa.

A.4.2.2. Eligibility criteria for inclusion of a SSC-CPA in the PoA:

Sl. No.	Eligibility criteria description	Information/document required
1.	The CPA shall be located within the geographical boundaries of the PoA.	The following documents shall be provided: <ul style="list-style-type: none"> • GPS co-ordinates of project activity within CPA
2.	(a) Project lamps distributed by the CPA shall be marked with unique identification of the CPA. (b) The CPA has not yet been included in another Programme of Activities or has not yet been registered as a single CDM Project activity.	The following documents shall be provided: <ul style="list-style-type: none"> • Project lamps distributed shall have a CPA code marked on their casing or on project lamp to uniquely identify the project lamp with the PoA and with the CPA. • The numbering system or each CPA shall be ‘CS [CPA number]’ • The CPA Implementing entity shall signed a contract with CME confirming the “Inclusion of the contracted CPA in the PoA & CPA access. • Self-declaration from the CME that “The CPA has not yet been included in another Programme of Activities or has not yet been registered as a single CDM Project activity.”
3.	This programme is specifically for the battery-charged LED or CFL based lamps. There are various types of lamps exist, and these all are valid under this programme till the project lamps comply with standards as mentioned in the methodology AMS-III.AR. (Version 03.0)	The project lamps in each CPA shall at least meet the minimum technical and operational requirements as mentioned in the methodology AMS-III.AR. (Version 03.0) and shall submit documentation/certifications to the CME in this regard and the CME will record and store the information for validation and monitoring purpose. Documents shall include: <ul style="list-style-type: none"> • Certificates from Manufacturer or; • Certificates from 3rd Party accredited laboratory In either case, it shall be proved that the certifying laboratory



		is accredited under ISO/IEC 17025 or relevant national standards.
4.	<p>For the purpose of this PoA, the start date of the CPA will be when the CPA operator will place the first order for lamps.</p> <p>The start date shall be after the date of GSC i.e.,12/10/2011.</p>	<p>The CPA operator will provide documentary proof (like Sales documentation such as invoices, receipts or warranty cards) that the order was placed for the project lamps to the CME and the CME will record the start date of the CPA and confirm that a document check has been done.</p>
5.	<p>CPA shall meet the applicability conditions and other requirements of AMS-III.AR. (Version 03.0)</p>	<p>The following documents shall be provided:</p> <ul style="list-style-type: none"> • Declaration from CME that CPA meets the applicability criteria. • Technical specification from the manufacturer of the Solar LED / CFL lamps • Certificates from Manufacturer or; • Certificates from 3rd Party accredited laboratory <p>In either case, it shall be proved that the certifying laboratory is accredited under ISO/IEC 17025 or relevant national standards.</p>
6.	<p>CPA shall demonstrate additionality as per Annex 27 of EB 68 (version 09.0)</p>	<p>The following documents shall be provided:</p> <ul style="list-style-type: none"> • Technical specification from the manufacturer of the Solar LED / CFL lamps • Lamp sales/distribution records or distribution plan. • Emission reduction sheet <p>Additionality is proven at PoA level.</p>
7.	<p>For CPA under this PoA environmental impact assessment shall be carried out in line with applicable host country regulations.</p>	<p>The following documents shall be provided:</p> <ul style="list-style-type: none"> • Environmental analysis carried out in line with local environmental laws and detailed in section C of the CPA-DD.
8.	<p>Local stakeholder consultations will be required and conducted at CPA level, if all of the following conditions are met:</p> <ol style="list-style-type: none"> 1. The proposed CPA is the first CPA (in this PoA) in the Host Country. 2. DNA of the Host Country 	<p>The following documents shall be provided:</p> <ul style="list-style-type: none"> • Declaration from CME and CPA implementer confirming that the proposed CPA is the first CPA under the PoA in the host country. • Letter from DNA of the host country of either acceptance or rejection of LSC reports of other host country. • Advertisements for LSC • Attendance list



	does not accept the stakeholder consultation of any another CPA of any another country	<ul style="list-style-type: none"> • Minute of the meetings
9.	No official Development Aid shall be involved or diverted as a result of any activities in the CPA under the PoA.	<p>The following documents shall be provided:</p> <ul style="list-style-type: none"> • Declaration on non-involvement of ODA in PoA by CME • Declaration on non-involvement of ODA in CPA by CPA implementer
10.	For CPA types Where applicable, target group shall be identified in accordance with § 2 (c) of Annex 27,EB 68 (version 09.0)	<p>The following documents shall be provided:</p> <ul style="list-style-type: none"> • Business plan and distribution model. • Lamp sales/distribution records, if available.
11.	For CPA sampling requirements shall be assessed and carried out in line with requirements of Annex 4 & 5 of EB 69.	<p>If CPA shall chose for Option 2, paragraph 12, of the methodology, wherein the lamps used will be able to generate CERs for a period of seven years, sampling will be required for the monitoring.</p> <p>The following documents shall be provided:</p> <ul style="list-style-type: none"> • Sampling plan (more specifically the sampling design) • A sampling plan detailed in section B.6.1 of the CPA-DD • CME manual confirming that CPA implementer will abide by the requirements set forth by CME for the CPAs under this PoA.
12.	For CPAs under this PoA types Where applicable, the conditions that ensure that CPA in aggregate meets the small-scale or micro-scale threshold criteria and remains within those thresholds throughout the crediting period of the CPA shall be assessed in accordance with either Annex 26 of EB 68 (version 04.0) for micro-scale threshold or CMP.2, § 28 for small-scale thresholds.	<p>The following documents shall be provided:</p> <ul style="list-style-type: none"> • Emission reduction sheet
13.	For CPAs under this PoA debundling checks shall be performed in line with EB 54 Annex 13.	<p>The following documents shall be provided:</p> <ul style="list-style-type: none"> • Declaration from the CME • Declaration from the CPA implementer • A detailed description of debundling check in section



		<p>A.4.6 of CPA-DD</p> <ul style="list-style-type: none"> Emission reduction sheet with calculations for debundling limits
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A.4.3. Description of how the anthropogenic emissions of GHG by sources are reduced by a SSC-CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality):

A SSC-CPA under this PoA will reduce anthropogenic CO₂ emissions below those that would have occurred in the absence of the registered PoA by deploying more efficient Project Lamps which reduce kerosene consumption.

The proposed PoA is a voluntary coordinated action

The PoA is a voluntary coordinated action undertaken by CarbonSoft. The PoA was developed to substitute kerosene-based lamps in households in underdeveloped or poor countries to reduce kerosene consumption and does not have any legal or other obligation to do so. There are also no mandatory requirements that foresee individuals or families in these countries to use Project Lamps. There is no mandatory programme in Africa to foster the dissemination of Project Lamps (i.e., chargeable battery lamps).

The proposed voluntary coordinated action would not be implemented in the absence of the PoA

The voluntary coordinated action would not be implemented in the absence of the PoA. The voluntary coordinated action is not financially viable in the absence of CDM. All external funding will stem from the CDM, other external funding is not available. Therefore, the program would have not been implemented in the absence of CDM. There has been no public announcement of the PoA going ahead without CDM. As the CDM is the only external source of funding, the PoA and all CPAs cannot go ahead without CDM funding. Required finance to fund the programme is only supplied in return for CERs or revenues from CER sales.

Additionality

Paragraph 2 of the “Guidelines on the Demonstration of Additionality of Small-Scale Project Activities”, version 09.0 (Annex 27, EB 68) states that documentation of barriers is not required for the positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds. The point (c) of positive lists comprises of:

“Project activities solely composed of isolated units where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs) and where the size of each unit is no larger than 5% of the small-scale CDM thresholds;”

There are three eligibility criteria to enable a project for auto additional status, as per the aforementioned positive list:



1. *Project activities solely composed of isolated units:* The proposed project activity shall solely compose of isolated units. Each Project Lamp will be an isolated unit of the project activity.
2. *Where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs):* The proposed project activity shall distribute Project Lamps to households and SMEs.
3. *Where the size of each unit is no larger than 5% of the small-scale CDM thresholds:* The proposed project activity in the PoA is a Type III project activity. The 5% of the small-scale CDM threshold is the 3000 tCO₂e per year. Therefore, each Project Lamp shall save less than 3000 tCO₂e per year.

If all the aforementioned 3 eligibility criteria shall be met by the CPA then as per the guidelines the proposed project activity will be automatically additional.

Hence, it is determined that as per the guidelines the proposed project activity is automatically additional. The additionality has been proven at PoA level. The three eligibility criteria to become a project auto additional, will be proven at CPA level.

Hence, it is determined that as per the guidelines the proposed project activity is automatically additional. The additionality has been proven at PoA level. Only three eligibility criteria to become a project auto additional will be proven at CPA level.

A.4.4. Operational, management and monitoring plan for the programme of activities (PoA):

The following sections review the monitoring approach and management plan established by the PoA.

A.4.4.1. Operational and management plan:

Management Plan for CME:

CarbonSoft is the CME of the PoA and has developed and implemented a management system. The operational and management arrangements established by the CME for the implementation of the PoA are as per EB 63 Annex 3 Para 9. The operational and management arrangements for the PoA are discussed below:

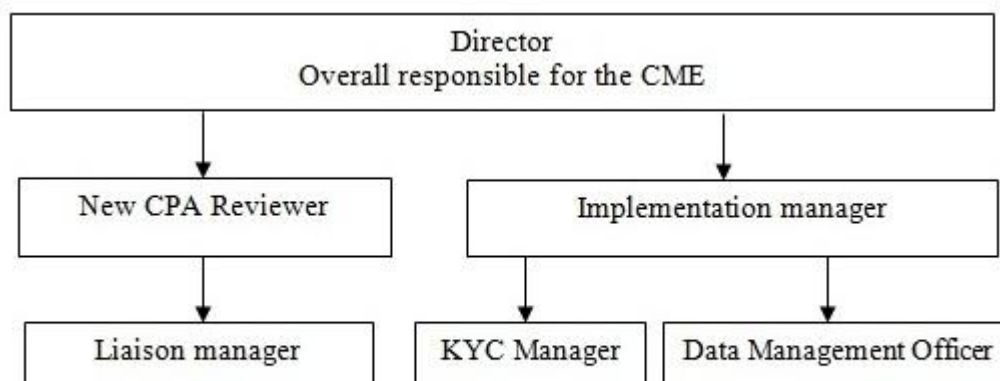
Requirement	A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies
Application	<ol style="list-style-type: none"> 1. Please refer below for details of personnel involved in the addition of new CPAs under the PoA 2. It has been ensured that responsibility is assigned to the various CarbonSoft team members based on their experience in the CDM markets.



S. No.	Designation	Tasks	Experience/Management Level	Competencies
1.	Liaison manager	The liaison manager will be in charge of getting in touch with those participants who wish to register CPAs under the PoA. His / Her task will be to begin communications in such interested parties and provide them with general information on the project and the conditions for the CPA to applicable under the PoA.	Low/Medium	<ul style="list-style-type: none"> • Corporate Communications • Legal Expertise • Should have basic knowledge of PoA especially the eligibility criteria.
2.	New CPA reviewer	Once the new CPA implementation entity is ready to join the PoA and have provided the relevant information and supporting documents towards this cause, the CPA reviewer will check that the CPA covers all eligibility criteria of the PoA as described in Section A.4.2.2 of the PoA-DD. The reviewer will collaborate with the entity to ensure all criteria (such as Project Lamps meeting AMS.III.AR, version 03 criteria) are met by means of a “CPA Inclusion form” which the new CPAs will have to complete.	High	<ul style="list-style-type: none"> • Should have understanding of CDM Rules, Methodology AMS.III.AR, tools and guidelines related to the PoA. • Basic technical knowledge of Project Lamps.
3.	KYC Manager	The KYC (Know Your Client) Manager is in charge of gathering KYC data from the CPA counter party. These include addresses, letters, and other documents.	Low/Medium	<ul style="list-style-type: none"> • Corporate Communications
4.	Implementation manager	The implementation manager will work closely with the CPA to ensure that pre-registration tasks are carried out with out any errors at the CPA end. He/She will assist in stakeholder consultations/ host country approval/validation activities. This will ensure the	High	<ul style="list-style-type: none"> • CDM-PDD drafting experience • Must have deep knowledge of all stages of CDM process



		CMEs experience in CDM can be put to use by the CPA implementation entities to ensure smooth sailing of the project activity.		
5.	Data Management Officer	The Data management officer will be responsible for collecting all documents throughout the Project activity. These will include data on Project Lamps distributed, CPA-DDs and other supporting documents that are required to be maintained by the CME.	Medium/High	<ul style="list-style-type: none"> • Corporate Communications • Expert in Excel



Organogram of CME

Requirement	Records of arrangements for training and capacity development for personnel
Application	The CME will ensure that annual training and capacity development workshops are held for the personnel. Also any new personnel hired will undergo training and orientation workshops. Records of such will be made available to DOE on request.

Requirement	Procedures for technical review of inclusion of CPAs;
Application	Technical review for inclusion of new CPAs will be carried out by the ‘New CPA reviewer’. The tasks for the above will include those mentioned in Section A.4.2.2 of the PoA-DD and which are based on the latest guidelines of the “Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of



	Multiple Methodologies for Programme of Activities” (Annex 3, EB 65).
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Requirement	A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM Project activity or as a CPA of another PoA)
Application	<p>In order to:</p> <ul style="list-style-type: none"> i) avoid double counting; ii) ensure that the operators of CPA under this PoA; and iii) ensure that operators of CPA are aware of and have agreed that their activity is being included under this PoA. <p>The following steps will be taken:</p> <p>The CPA operator would submit undertaking to CarbonSoft the Managing Entity of the PoA. Furthermore, the contractual agreement with all the operators covered under a CPA includes qualifying criteria for the addition of the CPA. The contractual agreement would cover the following points:</p> <ul style="list-style-type: none"> 1. The operator is aware and agreed that the project activity is included in the present PoA. 2. The operator undertakes that no emission reduction benefit from the Project shall be claimed by it through any other instrument either as a standalone Project or through bundle or as a CPA to any other PoA. <p>This will include cross referencing the CPA with:</p> <ul style="list-style-type: none"> 1. Existing CPAs in the electronic database; 2. UNFCCC CDM website Project cycle and validation pages, available at: http://cdm.unfccc.int/Projects/projsearch.html http://cdm.unfccc.int/Projects/Validation/index.html <p>The procedure for de-bundling check will have to confirm that each of the independent Project Lamp included in the CPA of a PoA is no larger than to generate 600 tCO₂e per year (1% of the small-scale thresholds for type III Projects), and hence the CPA of PoA is exempted from performing the de-bundling check (i.e., considering as not being is not a de-bundled component of a large scale activity). { (Reference: Para 10, Annex 13, EB 54)</p> <p>According to Paragraph 10, of Annex 13 of EB 54, <i>“If each of the independent subsystems/measures (e.g., biogas digester, solar home system) included in the CPA of a PoA is no larger than 1% of the small-scale thresholds defined by the methodology applied, then that CPA of PoA is exempted from performing de-bundling check i.e.,</i></p>



	<p><i>considering as not being a de-bundled component of a large scale activity”.</i> }</p> <p>Since the independent subsystem in this case will generate x ktCO₂e per year and if x will be lesser than 600 tCO₂e per year (1% of 60000 tCO₂e per year as specified by the small-scale methodology), this CPA of this PoA need not perform the de-bundling check.</p>
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Requirement	Records and documentation control process for each CPA under the PoA;
Application	<p>Records and documentation control will be managed by the office in charge by the ‘Data Management Officer’. The CME officer will be in charge of collecting quarterly data from the CPAs. A standard reporting document will have to be filled in by the CPAs and sent along with supporting documents by the 10th of every quarter of the crediting period. This will ensure timely collection of data at CME end and will help in the preparation of monitoring reports at the end of the crediting period.</p>

Requirement	Measures for continuous improvements of the PoA management system
Application	<p>An annual meeting will be held every year during which all CME team members will participate. The following will be the agenda of the meeting:</p> <ol style="list-style-type: none"> 1) Re-cap of previous year and major developments 2) Discussion of goals and whether they have been met or not 3) If not, various reasons that can be attributed to the above 4) Comments will be sought from each CME member and discussed 5) CPA owners will be asked to provide comments via mail and those will be considered 6) Goals for the coming year <p>The annual meeting will ensure that continuous improvements are made to the PoA management plan and to ensure proper implementation of the PoA. Key focus shall include CPA implementation, monitoring, data collection, review, recording and archiving and CER issuance.</p>

A.4.4.2. Monitoring plan:

(i) Description of the proposed statistically sound sampling method/procedure to be used by DOEs for verification of the amount of reductions of anthropogenic emissions by sources or removals by sinks of greenhouse gases achieved by CPAs under the PoA.

Not Applicable.



- (ii) **In case the coordinating/managing entity opts for a verification method that does not use sampling but verifies each CPA (whether in groups or not, with different or identical verification periods) a transparent system is to be defined and described that ensures that no double accounting occurs and that the status of verification can be determined anytime for each CPA;**

The CME opts for a verification method that does not use sampling but verifies each CPA.

Emission reductions achieved by each individual CPA will be verified by checking the following parameters:

1. The number of project lamps distributed will be verified by randomly selecting quarterly reports that have been prepared by the CPA entities and contain information about the number of project lamps that have been distributed by the CPA entity. The numbers in the quarterly reports will be compared with the numbers that are recorded in the project database and based on which the emission reductions are calculated.
2. The percentage of project lamps that are operational in year three of a CPA will be verified by randomly selecting a sample of the sample records that have been collected by the CPA entity when doing the survey. Using own professional judgment, the DOE will check the acceptability of the data for each record in the CPA's sample records.

The latest version of the Standard for sampling and surveys for CDM project activities and programme of activities (Version 2.0) will be used for determining the sampling approach and sample size during verification.

In order to avoid double accounting occurs, the CME will design the project database in such a way that project lamps can only be assigned to one CPA. This will help avoiding that a project lamp is counted twice under two CPAs. The project database will be updated on a regular basis allowing the status of the CPA to be verified at any time.

A.4.5. Public funding of the programme of activities (PoA):

No public funding will be used for the activity. However if a CPA does receive public funding it will be required to prove that the finance is not a diversion of official development assistance and is separate from and is not counted towards the financial obligations of the Host Party to which it operates under.

SECTION B. Duration of the programme of activities (PoA)

B.1. Starting date of the programme of activities (PoA):

01/03/2013 or date of registration, whichever is later.

B.2. Length of the programme of activities (PoA):

28 Years



SECTION C. Environmental Analysis

C.1. Please indicate the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken. Justify the choice of level at which the environmental analysis is undertaken:

1. Environmental Analysis is done at PoA level
2. Environmental Analysis is done at SSC-CPA level

Environment Analysis is completed at the CPA Level because the environmental impact will be different for each CPA. This is because the PoA covers multiple countries in Africa and the CPAs will be in separate countries.

C.2. Documentation on the analysis of the environmental impacts, including transboundary impacts:

An environmental analysis will be conducted only in the first CPA Project of each host country. This is because each LED lighting Project is not site specific.

C.3. Please state whether in accordance with the host Party laws/regulations, an environmental impact assessment is required for a typical CPA, included in the programme of activities (PoA);

Environmental impact assessments and pertinent laws and regulations shall be addressed at the CPA Project level.

SECTION D. Stakeholders' comments

D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:

1. Local stakeholder consultation is done at PoA level
2. Local stakeholder consultation is done at SSC-CPA level

The Local Stakeholder Consultations will be held at a CPA level, taking into consideration the differences of circumstances and opinions of each and every community in which each CPA is located. The goal of hosting local stakeholder consultations is to ensure that customers and affected persons will be able to share their opinions of the Project and be provided with essential feedback on the CPA's proposed activities.

A stakeholder consultation will be carried out once for each host country (where the DNA does not accept the stakeholder consultation of any other CPA proposed in this PoA). If the DNA accepts an existing stakeholder consultation of any other CPA proposed in the PoA, then there is no need to carry out additional stakeholder consultation in the respective host country. Furthermore, additional stakeholder consultations are 'not required' for each subsequent CPA in a host country as the project activities are not site specific.

CPA project developers will take care to ensure comments from all relevant stakeholders are invited and actions are carried out on the comments received.



D.2. Brief description how comments by local stakeholders have been invited and compiled:

Not applicable.

D.3. Summary of the comments received:

Not applicable, conducted at the CPA level.

D.4. Report on how due account was taken of any comments received:

Not Applicable, conducted at the CPA level.

SECTION E. Application of a baseline and monitoring methodology

E.1. Title and reference of the approved SSC baseline and monitoring methodology applied to a SSC-CPA included in the PoA:

The methodology AMS.III.AR *“Substituting fossil fuel based lighting with LED lighting systems”* (version 03) is chosen and applicable to all CPAs.

E.2. Justification of the choice of the methodology and why it is applicable to a SSC-CPA:

S. No.	AMS.III.AR Criteria	Justification
1.	This category comprises activities that replace portable fossil fuel based lamps (e.g., wick based kerosene lamps) with battery-charged LED or CFL based lighting systems in residential and/or non-residential applications (e.g. ambient lights, task lights, portable lights).	<p>The PoA involves replacement of fossil fuel lamps with LED/CFL based lighting in African Region.</p> <p>As demonstrated in “Carbon to Light” the use of portable, cheap kerosene lamps is prevalent across populations across Africa. The project developer will replace consumer’s kerosene lamps with Project Lamps in accordance with AMS.III.AR version 3.</p> <p>The CPA will suitably demonstrate in the CPA-DD that fossil fuel lamps are a common feature in the region where the CPA is located. It will be demonstrated through publicly available data and literature review that fossil fuel is used predominantly in the region for lighting and thus distribution of LEDs/CFLs will lead to reduction on consumption of Fossil Fuels.</p>
2.	This methodology is applicable only to Project Lamps whose batteries are charged using one of the following options:	All the Project Lamps that will be distributed under this PoA shall use rechargeable batteries charged by:



	<p>(a) Charged by renewable energy system included as part of the Project Lamp (e. g. a photovoltaic systems or mechanical systems such as wind battery chargers);</p> <p>(b) Charged by a standalone distributed generation system (e.g. a diesel generator set) or a mini-grid, i.e. that is not connected to a national or regional grid;</p> <p>(c) Charged by a grid that is connected to regional/national grid.</p>	<p>(a) renewable energy systems</p> <p>The details of the Project Lamp will be provided in the CPA-DD to ensure its meets the criteria of recharging as mentioned above.</p>
3.	<p>At a minimum project lamps shall be certified by their manufacturer to have a rated average life of at least:</p> <ul style="list-style-type: none"> •5,000 hours for Option 1, paragraph 11 of approved methodology AMS.III.AR version 03 •10,000 hours for Option 2, paragraph 12 of approved methodology AMS.III.AR version 03 <p>Rated average life is the life certified by the manufacturer or responsible vendor as being the time at which the lamp’s initial light output will decline by no more than 30%. In addition, the manufacturer shall certify that the project lamp’s’ battery charging circuit efficiency, at the time of purchase, is at least 50%.</p>	<p>The distributed Project Lamps under the CPA shall have suitable manufacturer certification that the units have an average life equal to the minimum average life specified by the methodology:</p> <ul style="list-style-type: none"> • 5,000 hours for Option 1, paragraph 11 of approved methodology AMS.III.AR version 03; or • 10,000 hours for Option 2, paragraph 12 of approved methodology AMS.III.AR version 03 <p>For the CPAs opting option 2 under this PoA shall provide certificate to substantiate the rated average life of minimum 10,000 hours from a third-party laboratory accredited under ISO/IEC 17025 or relevant national standards.</p>
4.	<p>Project Lamps shall have a warranty of a minimum of one year. At a minimum, the warranty shall cover free replacement or repair of any failed lamps, batteries and where applicable solar panels.</p> <p>The warranty shall be provided to end users of the project lamps. In a situation where the project lamps are distributed through intermediaries, the one year warranty shall commence from the time that the project lamps are distributed to end-users.</p>	<p>All project lamps included in the PoA shall accord the user a minimum one year warranty which will cover replacement/repair of failed lamps, batteries and solar panels. The warranty shall be provided to end-users of the project lamps. The one year warranty will commence from the time when the project lamps are distributed to end-users irrespective of any of the distribution mechanism.</p>
5.	<p>Project Lamps shall meet or exceed the following minimum performance characteristics, which should be proven by third-party test results:</p> <p>(a) Light Output: Luminous flux of 20 lumens or illuminance of 25 lux over an</p>	<p>All Project Lamps included in the CPA shall ensure meeting or exceeding the minimum performance parameters mentioned in paragraph 5, which shall be proven by third-party test results or manufacturer certificates:</p> <p>(a) Light Output: Luminous flux of 20 lumens or illuminance of 25 lux over an area ≥ 0.1</p>



	<p>area ≥ 0.1 m² when suspended at a distance of 0.75 meters or self-supported. The light output over a 2,000 hour lumen maintenance test should not decline by more than 20% for Option 1 (paragraph 11) or 15% for Option 2 (paragraph 12);</p> <p>(b) Run Time and Battery Capacity: Daily Burn Time (DBT) shall meet the following requirements:</p> <p>(i) DBT shall be equal to or greater than 3.5 hours;</p> <p>(ii) For charging option 2(a) the Autonomous Time of the Project Lamps shall meet the following requirements: – For Option 1, paragraph 11, the Autonomous Time shall be equal to or greater than 150% than the DBT of the Project Lamps; – For Option 2, paragraph 12, the Autonomous Time shall be equal to or greater than 150% of the DBT of the Project Lamps;</p> <p>(iii) For charging options 2(b) and 2(c) the Autonomous Time of the Project Lamps shall meet the following requirements: – For Option 1, paragraph 11, the Autonomous Time shall be equal to or greater than 200% of the DBT of the Project Lamps; – For Option 2, paragraph 12, the Autonomous Time shall be equal to or greater than 200% of the DBT of the Project Lamps;</p> <p>(iv) For charging with solar PV under option 2(a) the Solar Run Time for the Project Lamp in each month of the year (as determined per paragraph 7(g)) shall be greater than or equal to the DBT;</p> <p>(v) For charging option per 2(b) or 2(c), the Project Lamp shall be fully charged after eight hours of charging.</p>	<p>m² when suspended at a distance of 0.75 meters or self-supported. The light output over a 2,000 hour lumen maintenance test should not decline by more than 20% for Option 1 (paragraph 11) or 15% for Option 2 (paragraph 12);</p> <p>(b) Run Time and Battery Capacity: Daily Burn Time (DBT)⁴ shall meet the following requirements:</p> <p>(i) DBT shall be equal to or greater than 3.5 hours;</p> <p>(ii) For charging option 2(a) the Autonomous Time of the Project Lamps shall meet the following requirements: – For Option 1, paragraph 11, the Autonomous Time shall be equal to or greater than 150% than the DBT of the Project Lamps; – For Option 2, paragraph 12, the Autonomous Time shall be equal to or greater than 150% of the DBT of the Project Lamps;</p> <p>(iii) Not Applicable as charging option will be 2(a) only;</p> <p>(iv) For charging with solar PV under option 2(a) the Solar Run Time for the Project Lamp in each month of the year (as determined per paragraph 7(g)) shall be greater than or equal to the DBT;</p> <p>(v) Not Applicable as charging option will be 2(a) only;</p> <p>Performance characteristics as mentioned above shall be confirmed by certificates/test reports provided by a third-party testing organization or manufacturer. The test protocols shall based on applicable national standards where such are available or alternatively the standards or test protocols indicated in annex 1 of version 03 the methodology AMS III AR. In either case, the laboratory conducting and certifying the tests shall comply with the requirements of a relevant national or international standard, e.g. ISO/IEC 17025.</p> <p>In either case, it shall be proved that the certifying laboratory is accredited under ISO/IEC 17025 or relevant national standards.</p>
6.	The project design document shall explain the	All CPA implementing parties will provide



	<p>proposed distribution method of the project lamps. It shall also explain how the proposed project activity will:</p> <ul style="list-style-type: none"> (a) Ensure that the replaced baseline lamps are those that directly consume fossil fuel. This can be done through documentation of the common practice of fuel usage for lighting in the project region (e.g., based on representative sample surveys, official data or peer reviewed literature); (b) Eliminate potential double counting of Emission Reductions that could occur, for example, if more than one entity (e.g., lamp manufacturers, suppliers of solar and/or battery equipment, etc) claims credit for Emission Reductions for the Project Lamps. At a minimum, Project Lamps shall be marked as CDM Project Lamps; (c) Ensure compliance with prevailing regulations pertaining to the use and disposal of batteries. 	<p>distribution details by providing the following information:</p> <ul style="list-style-type: none"> a. Official data or national/regional literature on dominance of kerosene fuel for traditional lighting applications. b. Description of project lamp identification to uniquely identify it to the CPA (e.g., such as a bar code or serial number) c. Compliance with all relevant regulations with Host Party laws/regulations on use and disposal of batteries.
<p>7.</p>	<p>The project design document shall include the minimum requirements for the design specifications of project lamps including the following specifications:</p> <ul style="list-style-type: none"> a. Lamp wattage (in Watts) and luminous flux output (in lumens); b. Rated lamp life (in hours); c. Where applicable, the type and rated capacity of the renewable energy equipment used for battery-charging (in Watts); d. Type (e.g. NiMH, Lead-Acid, Li-ion), and rated capacity of the batteries (in Ampere Hours); e. Type of charge controller (e.g. active or passive); f. Autonomous Time and Daily Burn Time; g. Solar Run Times(s) (SRT) for products with solar energy charging systems. If regional solar data are available, the maximum, minimum and average estimated SRT values for each month of a typical year shall be provided. If regional solar data are not available the 	<p>CPA-DDs must incorporate the technical description with a detailed description highlighting the 9 parameters elaborated in paragraph 7 of the methodology.</p>



	<p>standard solar day (5 kWh/m²) shall be used to estimate SRT.</p> <p>h. Where applicable, the amount of time to fully charge the product using mechanical means or a centralized charging system (e.g. the national grid)</p> <p>i. Physical protection against environmental factors (e.g., rain, heat, insect ingress).</p>	
8.	<p>The project activity shall restrict the number of project lamps distributed through the project activity to no more than five per household or per business location (e.g. for commercial applications such as shops).</p>	<p>A maximum of five Project Lamps per household or business location shall be recognized as Project Lamps within the CPA Project. This will be determined by the CPA project developer's records.</p> <p>The CPA project developer will report any sales, where more than 5 lamps have been distributed to a household, only the first 5 lamps shall be eligible to earn CERs. A record of all surplus sales shall be kept and the total number of surplus lamps distributed shall be deducted from the final sales data prepared for verification</p>
9.	<p>Measures are limited to those that result in emissions reductions of less than or equal to 60 kt CO₂ equivalent annually.</p>	<p>This PoA only includes individual CPAs which will result in less than or equal to 60,000 tCO₂e annually.</p>
10.	<p>LED Lamp Effective Useful Life</p> <p>Option 1: Project lamps are assumed to operate for two years after distribution to end-users. Therefore, under this option, emission reductions may only be claimed for two years.</p> <p>Option 2: Project lamps are assumed to operate for up to seven years after distribution to end-users, and thus emission reductions can be claimed for up to seven years per project lamp, if all of the following conditions are met:</p> <p>a) At a minimum, project lamps must be certified by their manufacturer to have a useful life of 10,000 hours. Within this time span, the relative luminous flux shall not decrease by more than 30% as per equation 1. Such claims shall be confirmed by a third-party testing organization using an</p>	<p>Project Lamps distributed will either operate for :</p> <p>Option 1: Project lamps are assumed to operate for two years after distribution to end-users. Therefore, under this option, emission reductions may only be claimed for two years.</p> <p>Option 2: Project lamps are assumed to operate for up to seven years after distribution to end-users, and thus emission reductions can be claimed for up to seven years per project lamp, if all of the following conditions are met:</p> <p>a) The LED lamps will be certified by their manufacturer to have a useful life of 10,000 hours. Within this time span, the relative luminous flux shall not reduce by more than 30% as per equation 1. Such claims shall be confirmed by a third-party testing organization using an applicable standard and testing protocol.</p>



	<p>applicable standard and testing protocol. As an alternative to long-term measurement of light output over the full lifetime of the lamp, a shortened measurement period of 2,000 hours may be chosen. If a 2,000 hour test period is used, the relative luminous flux shall not decrease by more than 15% during the 2,000 hours of continuous operation. As per the principles indicated in AMS-II.J “Demand-side activities for efficient lighting technologies”, if the average life value is not available ex ante, it shall be made available for verification;</p> <p>b) The project lamps use a replaceable, chargeable battery. In addition, there must be documented measures in place to ensure that lamp owners have access to replacement batteries of comparable quality;</p> <p>c) With regard to physical ingress and water protection, the project lamps shall achieve a minimum level of protection, based on the type of lamp, in accordance with IEC 60529, or an equivalent national standard, or the approved norms indicated in appendix 1;</p> <p>i) For lamps with integrated solar modules or solar modules with a cable length less than three meters, the ingress protection (IP) class of the lamp shall be 43 or greater; or alternatively the lamp shall be protected from an equivalent level of environmental exposure;</p> <p>ii) For lamps with integrated energy storage (i.e. battery) and external solar modules with cable lengths greater than 3 meters, the IP class of the lamp shall be 41 or greater; or alternatively the lamp shall be protected from an equivalent level of environmental exposure;</p>	<p>As an alternative to long-term measurement of light output over the full lifetime of the lamp, a shortened measurement period of 2,000 hours may be chosen. If a 2,000-hour test period is used, the relative luminous flux shall not decrease by more than 10% during the 2,000 hours of continuous operation. As per the principles indicated in paragraph 4 of AMS-II.J Demand-side activities for efficient lighting technologies, if the average life value is not available ex ante, it shall be made available for verification;</p> <p>b) The project lamps use a replaceable, chargeable battery. In addition, there must be documented measures in place to ensure that lamp owners have access to replacement batteries of comparable quality;</p> <p>c) With regard to physical ingress and water protection, the project lamps shall achieve a minimum level of protection, based on the type of lamp, in accordance with IEC 60529, or an equivalent national standard, or the approved norms indicated in appendix 1;</p> <p>i) For lamps with integrated solar modules or solar modules with a cable length less than three meters, the ingress protection (IP) class of the lamp shall be 43 or greater; or alternatively the lamp shall be protected from an equivalent level of environmental exposure;</p> <p>ii) For lamps with integrated energy storage (i.e. battery) and external solar modules with cable lengths greater than 3 meters, the IP class of the lamp shall be 41 or greater; or alternatively the lamp shall be protected from an equivalent level of environmental exposure;</p> <p>iii) For lamps with separate energy storage, light points, and external solar modules with cable lengths greater than three meters, the IP class of the storage base unit and</p>
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	<p>iii) For lamps with separate energy storage, light points, and external solar modules with cable lengths greater than three meters, the IP class of the storage base unit and light points shall be 21 or greater; or alternatively the lamp shall be protected from an equivalent level of environmental exposure;</p> <p>d) Conditions 12(a) and 12(c) are confirmed by a third-party testing organization based on sample tests of project lamps using applicable national standards where such are available, or alternatively, the standards or test protocols indicated in appendix I of this methodology may be used. The laboratory conducting and certifying the tests shall comply with the requirements of a relevant national or international standard, e.g. ISO/IEC 17025. If the testing results are not available ex ante, they shall be made available at project verification;</p> <p>e) Project lamps shall be marked for clear, unique identification to associate them with each unique CDM project.</p>	<p>light points shall be 21 or greater; or alternatively the lamp shall be protected from an equivalent level of environmental exposure;</p> <p>d) Conditions (a) and (c) are confirmed by a third-party testing organization based on sample tests of project lamps using applicable national standards where such are available, or alternatively, the standards or test protocols indicated in appendix I of the methodology AMS.III.AR, ver 03. The laboratory conducting and certifying the tests shall comply with the requirements of a relevant national or international standard, e.g. ISO/IEC 17025. If the testing results are not available ex ante, they shall be made available at project verification;</p> <p>e) Project lamps shall be marked for clear, unique identification to associate them with each unique CDM project.</p>
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E.3. Description of the sources and gases included in the SSC-CPA boundary

	Source	Gas	Included?	Justification / Explanation
<i>Baseline Activity</i>	GHG emissions generated from the combustion of kerosene fossil fuel	CO ₂	Included	Main emission source
<i>Project Activity</i>	GHG emissions from emissions due to charging of batteries (if non renewable source of energy is used)	CO ₂	No	Since the PoA deals exclusively with replacing kerosene lamps with Project Lamps charged with renewable (e.g., solar) or mechanical energy, there will be no Project emissions.



E.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:

The baseline in this PoA is developed in accordance with the baseline and monitoring methodology of AMS.III.AR which states that “this category comprises activities that replace portable fossil fuel based lamps (e.g., wick based kerosene lamps) with battery-charged LED or CFL based lighting systems in residential and/or non-residential applications (e.g. ambient lights, task lights, portable lights).”

According to the recent “From Carbon to Light” report one quarter of humanity continues to obtain illumination by burning fossil fuels, which is estimated to generate 190 million tonnes of carbon dioxide (“CO₂”) per year. As demonstrated in “Carbon to Light” the use of portable, cheap kerosene lamps is prevalent across populations across Africa and Asia.⁹

E.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the SSC-CPA being included as registered PoA (assessment and demonstration of additionality of SSC-CPA): >>

E.5.1. Assessment and demonstration of additionality for a typical SSC-CPA:

Additionality

Paragraph 2 of the “Guidelines on the Demonstration of Additionality of Small-Scale Project Activities”, version 09.0 (Annex 27, EB 68) states that documentation of barriers is not required for the positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds. The point (c) of positive lists comprises of:

“Project activities solely composed of isolated units where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs) and where the size of each unit is no larger than 5% of the small-scale CDM thresholds;”

There are three eligibility criteria to become a project auto additional as per the aforementioned positive list:

1. *Project activities solely composed of isolated units:* The proposed project activity shall solely composed of isolated units. Each Project Lamp will be an isolated unit of the project activity.
2. *Where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs):* The proposed project activity shall distribute Project Lamps to households and SMEs.
3. *Where the size of each unit is no larger than 5% of the small-scale CDM thresholds:* The proposed project activity in the PoA is a Type III project activity. The 5% of the small-scale CDM threshold is the 3000 tCO₂e per year. Therefore, each Project Lamp shall save less than 3000 tCO₂e per year.

If all the aforementioned 3 eligibility criteria shall be met by the CPA then as per the guidelines the proposed project activity will be automatically additional.

⁹ <http://light.lbl.gov/pubs/tr/lumina-tr5.pdf>



The project participants have chosen to demonstrate Additionality at PoA level.

E.5.2. Key criteria and data for assessing additionality of a SSC-CPA:

There are three eligibility criteria to become a project (SSC-CPA) auto additional as per the aforementioned positive list:

1. *Project activities solely composed of isolated units:* The proposed project activity shall solely compose of isolated units. Each Project Lamp will be an isolated unit of the project activity.
2. *Where the users of the technology/measure are households or communities or Small and Medium Enterprises (SMEs):* The proposed project activity shall distribute Project Lamps to households and SMEs.
3. *Where the size of each unit is no larger than 5% of the small-scale CDM thresholds:* The proposed project activity in the PoA is a Type III project activity. The 5% of the small-scale CDM threshold is the 3000 tCO₂e per year. Therefore, each Project Lamp shall save less than 3000 tCO₂e per year.

If all the aforementioned 3 eligibility criteria shall be met by the CPA then as per the guidelines the proposed project activity will be automatically additional. All the CPAs in this PoA will fulfil the above mentioned criteria and will be additional automatically.

E.6. Estimation of Emission reductions of a CPA:

E.6.1. Explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical SSC-CPA:

According to AMS.III.AR, version 03 the following methodological choices are applied for a typical SSC-CPA:

Technology/Measure

The type of Project Lamps system under this PoA will be only charged by a renewable energy system.

Boundary

Since the Project Lamps are charged by a renewable energy system, the Project boundary will include the physical, geographical site of the renewable energy system.

Lamp effective useful life

It is necessary to choose between one of the two options for the Project Lamp effective useful life, at the moment of the distribution for the batch of lamps delivered under the CPA¹⁰. This option must be

¹⁰ Project lamps may be distributed during multiple years as long as the elapsed lifetime of lamps can be



registered under the PoA management system. The effective useful life of lamp will be chosen at the CPA level.

Option 1, paragraph 11 of methodology AMS.III.AR: Project Lamps are assumed to operate for two years after their distribution to end-users. Therefore, the emission reductions can only be claimed for two years.

Option 2, paragraph 12 of methodology AMS.III.AR: Project Lamps are assumed to operate for seven years after Project lamp distribution to end-users, and thus emission reductions can be claimed for up to seven years per Project lamp, if all the conditions as mentioned in methodology for the Project Lamps are met.

Baseline Emissions

To calculate the baseline emissions, CarbonSoft has chosen to use alternate values for parameters in equation 2 and 3 that lead to exact number of baseline emissions in the region. The alternate values will only be used after adequate research/monitoring and documentation will be provided (e.g., strategic surveys and research conducted by national or local organizations, initiatives by international organizations or nongovernmental organizations or the project proponent to collect reliable and comprehensive data).

Project Emissions

Since the mechanism used is the paragraph 2(a) of AMS.III.AR, there are not project emissions associated to the PoA (PE_y = 0).

Monitoring

The monitoring for the CPA, depending on the choice of the LED Lamp effective useful life, will include the following:

1. Recording of Project lamp distribution data
2. Where Option 2, paragraph 12 of AMS.III.AR is chosen, ex-post monitoring surveys will be done to determine the percentage of Project Lamps distributed to end users that are operating and in service in year y.

E.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a SSC-CPA:

Baseline Emissions

$$DV = FUR * O * U * EF / 1000 * LF * n * NTG.....(1)$$

unambiguously tracked to ensure that emission reductions are not credited beyond two years (for Option 1) or seven years (for Option 2) for any given Project lamp.



Where:

S. No.	Parameter	Description
(a)	<i>DV</i>	Lamp Emission Factor (default is 0.092 tCO ₂ e per Project Lamp)
(b)	<i>FUR</i>	Fuel use rate (0.03 litres/hour)
(c)	<i>O</i>	Utilization rate (3.5 hours/day)
(d)	<i>U</i>	Annual utilization (365 days/year)
(e)	<i>EF</i>	Fuel emissions factor (2.4 kg CO ₂ / Litre)
(f)	<i>LF</i>	Leakage factor (1.0)
(g)	<i>n</i>	Number of fuel-based lamps replaced per Project Lamp (1.0)
(h)	<i>NTG</i>	Net-to-gross adjustment factor (1.0)

$$BE_y = DV * GF_y * DB_y \dots\dots\dots(2)$$

Where:

- BE_y* Baseline emissions per Project Lamp in year y (tCO₂e)
- GF_y* Grid Factor in year y, equal to 1.0 since the charging option defined in paragraph 2(a) of AMS.III.AR is used
- DB_y* Dynamic Baseline Factor (change in baseline fuel, fuel use rate, and/or utilization during crediting period) in year, y. Calculated as either:
 - Option 1: default of 1.0 in the absence of relevant information,
 - Option 2: value of 1.0+FFg where FFg is the documented national growth rate of kerosene fuel use in lighting from the preceding years (use the most recent available data of three or five years average (fraction))

To calculate the value of *BE_y*, PP shall use default value. PP shall use alternative values also for the parameters (a) to (g), if adequate research/monitoring and documentation is provided by the Project proponent. For example, strategic surveys and research conducted by national or local organizations, initiatives by international organizations or nongovernmental organizations or the Project proponent to collect reliable and comprehensive data (as per paragraph 15 of AMS.III.AR, version 03)

Project Emissions

According to AMS.III.AR, project emissions are assumed to be 0 where the Project Lamp charges using a renewable energy source. This value is justified given that the project only employs renewable charging for the lighting products.

$$PE_y = 0$$

Emission Reductions

Annual emission reductions are calculated as:

$$ER_y = \sum_{i,j} N_{i,j} * (BE_{y,i} - PE_{y,i,j}) * (OF_{y,i,j}), \dots\dots\dots(3)$$

Where:



ER_y Emission reductions in year y (tCO₂e)
 N_{ij} Number of Project Lamps distributed to end users of type i with charging method j
 $OF_{y,i,j}$ Percentage of Project Lamps distributed to end users that are operating and in service in year y , for each lamp type, i and charging method, j . Assumed to equal to 100% for years 1, 2 and 3. Equal to value determined per paragraph 21, for years 4, 5, 6 and 7¹¹

E.6.3. Data and parameters that are to be reported in CDM-SSC-CPA-DD form:

Data / Parameter:	O
Data unit:	Hours/day
Description:	Utilization rate: average operating hours are the average operational hours of kerosene lamps in the baseline
Source of data used:	Baseline and Monitoring Methodology AMS.III.AR version 03.
Value applied:	3.5
Justification of the choice of data or description of measurement methods and procedures actually applied:	The figure provided by the baseline and monitoring methodology is conservative and will be used by each CPA throughout the crediting period.
Any comment:	

Data / Parameter:	U
Data unit:	days/year
Description:	Number of days in calendar year in which the baseline lamps are used
Source of data used:	Baseline and Monitoring Methodology AMS.III.AR version 03.
Value applied:	365
Justification of the choice of data or description of measurement methods and procedures actually applied:	Default value provided by the baseline and monitoring methodology.
Any comment:	

Data / Parameter:	EF
Data unit:	KgCO ₂ / litre
Description:	Fuel Emission Factor of CO ₂ emissions realized from the combustion of 1 litre of fuel.
Source of data used:	Baseline and Monitoring Methodology AMS.III.AR version 03.
Value applied:	2.4
Justification of the	Default value provided by the baseline and monitoring methodology.

¹¹ The years refer to the operational years of Project Lamps (e.g. for Project Lamps distributed in year 3 of the crediting period years 1, 2 and 3 relate to the years 3, 4 and 5 of the crediting period and so forth).



choice of data or description of measurement methods and procedures actually applied:	
Any comment:	

Data / Parameter:	<i>LF</i>
Data unit:	Value
Description:	Leakage factor
Source of data used:	Baseline and Monitoring Methodology AMS.III.AR version 03.
Value applied:	1.0
Justification of the choice of data or description of measurement methods and procedures actually applied:	Default value provided by the baseline and monitoring methodology.
Any comment:	

Data / Parameter:	<i>N</i>
Data unit:	Value
Description:	Number of fuel-based lamps replaced per Project Lamp
Source of data used:	Baseline and Monitoring Methodology AMS.III.AR version 03.
Value applied:	1.0
Justification of the choice of data or description of measurement methods and procedures actually applied:	Default value provided by the baseline and monitoring methodology.
Any comment:	

Data / Parameter:	<i>NTG</i>
Data unit:	Value
Description:	Net-to-gross factor
Source of data used:	Baseline and Monitoring Methodology AMS.III.AR version 03.
Value applied:	1.0
Justification of the choice of data or description of measurement methods and procedures actually applied:	Default value provided by the baseline and monitoring methodology.
Any comment:	

Data / Parameter:	<i>DV</i>
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Data unit:	tCO ₂ e
Description:	Lamp Emission Factor
Source of data used:	Calculated
Value applied:	Default value specified in AMS.III.AR: 0.092; if all the parameters in the calculation have default value or specific calculated value.
Justification of the choice of data or description of measurement methods and procedures actually applied:	This value is calculated corresponding with AMS.III.AR, version 03. If other more realistic data for the region is available, then the parameters must be specified in the corresponding CPA for the Equation 2 of AMS.III.AR, version 03. Therefore, adequate documentation must be presented.
Any comment:	

Data / Parameter:	<i>FUR</i>
Data unit:	Litres per hour
Description:	Quantity of kerosene used per hour in household by a kerosene lamp
Source of data used:	Default value provided or Value quantified based on baseline surveys or literature review.
Value applied:	Default Value of 0.03 or figure derived from baseline surveys or literature review of the respective host country or regional data within Host Party within which the CPA is to be implemented.
Justification of the choice of data or description of measurement methods and procedures actually applied:	The baseline and monitoring methodology provides a default value for Fuel Use Rate. However the methodology AMS III AR has a provision in paragraph 15 that allows CPA implementers to use alternative values based on strategic surveys and research conducted by national or local organizations, initiatives by international organizations or non-governmental organizations or the project proponent to collect reliable and comprehensive data. All reports/ baseline survey results must be provided to the CME and DOE upon request for validation and verification purposes.
Any comment:	

Data / Parameter:	<i>DB_v</i>
Data unit:	Value
Description:	Dynamic Baseline Factor
Source of data used:	AMS III AR and literature review of documented national growth rate of kerosene fuel use in lighting from the preceding years.
Value applied:	1.0 + (FFg) where FFg is the documented national growth rate of kerosene fuel use in lighting from the preceding years.
Justification of the choice of data or description of measurement methods and procedures actually applied:	This parameter accounts for increased fuel use for lighting as it affects the baseline fuel consumption throughout the crediting period.
Any comment:	

E.7. Application of the monitoring methodology and description of the monitoring plan:



E.7.1. Data and parameters to be monitored by each SSC-CPA:

Data / Parameter:	$N_{i,j}$
Data unit:	Number
Description:	Number of Project Lamps Distributed
Source of data to be used:	CPA Management System Database
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Value from CPA sales record
Description of measurement methods and procedures to be applied:	<p>A sales record will be established per CPA which shall highlight</p> <p><i>If 2 years crediting period</i></p> <ul style="list-style-type: none"> - number of Project lamps distributed ($N_{i,j}$) - type of Project lamp distributed (lamp wattage, battery type, charging method, the date of distribution)¹² <p><i>If 7 years crediting period</i></p> <p>Additional to the above, data to unambiguously identify recipient of each project lamp, for all the Project lamps</p> <ul style="list-style-type: none"> - Customer details <ul style="list-style-type: none"> o Name o Surname o Identification information
QA/QC procedures to be applied:	Data will be collected using the standard company procedures and stored for the crediting period and an additional two years after the end of the CPA period.
Any comment:	

Data / Parameter:	USN
Data unit:	Figure
Description:	Unique Identification Number of each lamp distributed under the PoA for lamps to be credited up to 7 years (Option 2, paragraph 12, AMS.III.AR, version 03)
Source of data to be used:	CPA Management System Database
Value of data applied for the purpose of calculating expected	Each CPA will be accorded a unique number and furthermore each CPA will accord each solar lamp its own number.

¹² In the case of project activities which do not involve direct distribution of project lamps to end-users, but instead involve distribution of project lamps through intermediaries, the average number of days between the date on which project lamps are delivered to intermediaries and the date on which the project lamps are distributed from the intermediaries to end-users can be determined using either survey methods or by using a default value of 120 days. The survey methods may either be of a census of intermediaries (if the number of intermediaries is equal to less Than 50) or using sampling methods in accordance with the “Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities”. However, the date of delivery of project lamps to all intermediaries shall be directly recorded with no recourse to sampling.



emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	An electronic database with maintained by both the CPA and CME, which incorporates the unique serial number of solar LED lamp and CPA implementing party.
QA/QC procedures to be applied:	The unique identification of both CPA and Project Lamps will prevent double counting and provide a verifiable database with contact details of each customer for monitoring and verification purposes.
Any comment:	This parameter is only applicable to CPAs with an effective useful life of 7 years (Option 2, paragraph 12, AMS.III.AR, version 03)

Data / Parameter:	$OF_{y,i,j}$
Data unit:	Percentage
Description:	Percentage of distributed lamps which are in service and operational in year, y
Source of data to be used:	Monitoring survey at year 3 of crediting period
Value of data applied for the purpose of calculating expected emission reductions in section B.5	100% for years 1, 2 and 3 and then the value derived from Percentage of lamps distributed that are operational after year 3.
Description of measurement methods and procedures to be applied:	Monitoring surveys will be conducted from year 3 of the individual CPA crediting period using random sampling methods.
QA/QC procedures to be applied:	Data will be collected using the standard company procedures and stored for the crediting period and an additional two years after the end of the CPA period.
Any comment:	

E.7.2. Description of the monitoring plan for a SSC-CPA:

The monitoring plan implemented for this PoA applies the approved small scale monitoring methodology AMS III AR version 3. The indicative baseline and monitoring methodology describes two options for LED Lamp effective useful life (Para 11 and Para 12), these options are:

1. Option 1: Where project lamps are assumed to operate for two years after project lamp distribution to end users.
2. Option 2: where project lamps are assumed to operate for seven years after project lamp distribution to end users.

Accordingly there shall be separate data recording plans for either type of project lamp based on the Project lamp's effective useful life. The following database will be operated and maintained to ensure completeness and accuracy of monitoring information:

- **Sales record (SR):** Project Lamp systems deployed sales records

CPAs implemented under Option 1:



Sales Record for the CPA

- a) The CME will keep and maintain an electronic database for each CPA included in the PoA and these records will include the following:
 - i. Name and unique ID number of the CPA
 - ii. LED Lighting System type with details of lamp wattage, battery type and month of distribution
 - iii. Distribution/Implementing partners and their contact details
 - iv. Date of Registration of the CPA
 - v. Start date of the CPA
 - vi. CERs issued per verification period
 - vii. Total Number of lamps distributed

CPAs implemented under Option 2:

Sales Record for the CPA

- a) The CME will keep and maintain an electronic database for each CPA included in the PoA and these records will include the following:
 - i. Name and unique ID number of the CPA
 - ii. LED Lighting System type with details of lamp wattage, battery type and month of distribution
 - iii. Distribution/Implementing partners and their contact details
 - iv. Date of Registration of the CPA
 - v. Unique Identification for lamps sold under the CPA
 - vi. Start date of the CPA
 - vii. CERs issued per verification period
 - viii. Total Number of lamps distributed
 - ix. Name and contact details of consumer
 - x. Number of Project lamps sold to consumer
 - xi. Location of sale

The table below shows the main characteristics of each database: parties involved, periodicity and format.

	Project lights deployed sales records (SR)
Parties involved	Primary data collection: Project developer Database maintenance: Project developer
Periodicity	Continuous
Format	Paper or electronic for primary data Electronic database



Data saving	All data shall be saved for the whole crediting period, plus an additional two years
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In addition, CPA projects that choose **Option 2** will conduct monitoring surveys in the third year of the lamp being distributed at the CPA level to determine the percentage of Project Lamps distributed to end users that are operating and in service during the third year of the crediting period.

The following are the principles that need to be met during periodic monitoring for lamps distributed under **Option 2** and the ways project developers shall collect sampling information:

1. Only Project Lamps with an original unique marking can be counted as operating and in service.

CarbonSoft will ensure that each lamp distributed under the CPA will have a Unique Identification Number, which will be suitably placed on each Project Lamp. Following sampling, only those lamps with the number will be counted as operating and in service.

2. While Project Lamps replaced as part of a regular maintenance or warranty program can be counted as operating, Project Lamps cannot be replaced as part of the survey process and counted as operating

The monitoring and replacement groups will be kept separate. At the time of monitoring, no replacement will take place to ensure such lamps are not counted.

3. The sampling size is determined by minimum 90% confidence interval and the 10% maximum error margin; the size of the sample shall be no less than 100.

A detailed sampling plan has been described at the end of this section to ensure minimum of 90% confidence level and up to a 10% margin of error.

4. The survey will be conducted by site visits

A survey form is being created for the process and will be used to gather information from the end users at the time of monitoring by carrying out door-to-door site visits.

5. Only persons over age 12 will be interviewed

At the time of monitoring, a head of the household will be interviewed. In case this is not possible, other adults in the household will be interviewed. In no scenario, will any person under 12 be interviewed.

6. The CPA design document will describe in detail the survey design for gathering the above information.

The CPA-DD will describe the survey design for gathering the information required for monitoring.

7. The survey has a random distribution and is representative of target population (e.g., size, location)



A detailed sampling plan has been described at the end of this section to ensure random distribution.

8. The method to select respondents for interview is random

A detailed sampling plan has been described at the end of this section to ensure random sampling.

Sampling Plan and Procedure

Description of sampling plan for SSC-CPA

The following sampling plan is only applicable for using Option 2 defined in paragraph 12 of AMS. III.AR, version 03. In this case, monitoring shall include recording of Project Lamp distribution data. Ex-post monitoring surveys shall be conducted to determine $OF_{y,i,j}$ ¹³ in case of Option 2, para 12, for operational years 4,5,6, and 7 of the Project Lamps included in that CPA.

The following survey plan will be followed to determining number of Project Lamps in service and operating under the Project. The project activity is homogenous (i.e., shares a common technology with similar operating characteristics) but dispersed (i.e., the technology is implemented at a large number of sites, or in this case, households). Monitoring of every single lamp in a given Project activity may not be realistic or reasonable given the cost and time constraints. Therefore, sound sampling technique would be used to monitor the resultant emission reductions.

Sampling Information

Considering the large number of distribution of Project Lamps under a single SSC-CPA, statistical sampling is a necessary tool. The purpose of sampling is to obtain

1. Unbiased (i.e., measurements taken from repeated, independent samples would be, on average, equal to the population values)
2. Reliable estimates of the mean or total values of key variables (i.e., how closely the estimated value through sampling is likely to fall around the true population value in repeated samples)

The AMS III.AR requirement is that the sampling must be statistically robust and relevant. The statistical reliability or precision is the probability that the falls within a given range of the true population value, based on the variability of individual measurements in the sample.

Further, since the AMS III.AR version 03 requires that the sampling size be determined with minimum 90% confidence interval and the 10% maximum error margin, this implies to determine a sample size with 90% probability of falling in a range of $\pm 10\%$ of the true population value (often denoted as 90/10 precision).

In this section, the methodology for determining the sample size for a SSC-CPA is outlined as per EB-69, Annex-05.

¹³ Assumed to be equal to 100% for years 1, 2 and 3 as per paragraph 19, AMS.III-AR (version 03).



Outline of Sampling Plan Design in SSC-CPA DD¹⁴

(a) Sampling Design:

S. No.	Information Head	Coverage
(i)	Sampling Objective	The objective of the sampling is to determine the percentage of project lamps that are operational during the third year of the crediting period with a 90/10 confidence/precision.
(ii)	Target Population and sampling frame	The Target Population are recipients of project lamps. For CPA operators who use option 2 of the Effective useful life there shall be a Sales/ Distribution Record which shall be used to unambiguously trace the end users of the project lamps. This list shall be used to draw a sampling frame. All sampling frames shall be produced in electronic copies which shall be used to uniquely identify the location and final recipient of the project lamps.
(iii)	Sample Method	Simple Random Sampling
(iv)	Sample Size	<p>The sampling size is determined by minimum 90% confidence interval and the 10% maximum error margin; the size of the sample shall be no less than 100. A representative sample survey of target households at 90% confidence interval and ±10% error margin will be used to ensure unbiased and reliable estimates.</p> <p>We assume that 90% of household will still use the project lamps in year 3 and response rate will be 80%.</p> $n \geq \frac{1.645^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 p(1-p)}$ <p>Where:</p> <p><i>n</i> = Sample Size <i>N</i> = total number of households. <i>p</i> = Overall Proportion 1.645 = Represents the 90% confidence required 0.1 = Represents the 10% relative precision</p> <p>As we assume that response rate will be 80%, the sample size will be increase to <i>n</i>/0.8.</p> <p>If <i>n</i> is less than 100, then as per methodology the sample size will be</p>

¹⁴ Adapted for the PoA from the UNFCCC General guidance on sampling and surveys for SSC Projects, version 02, Annex 02, EB 65.



		100.
(v)	Degree of Variability	To be conservative this sampling plan shall assume a maximum of variability of 50%.

(b) Data:

S. No.	Information Head	Coverage
(i)	Field Measurements	<ul style="list-style-type: none"> • All the variables to measure are mentioned in section E.7.2. • The data from the sample size will be collected once in a year and timing will be randomly,
(ii)	Quality Assurance/Quality Control	<p>The SSC-CPA implementation agency in its monitoring and sampling plan provided with the CPA-DD will ensure proper quality control methods are prescribed to ensure that data gathered is error free. An overall quality control and assurance strategy shall be documented in the plan. This shall include a procedure for defining outliers and under what circumstances outlier data/measurements may be excluded and/or replaced.</p> <p>The implementation agency will also provide information on each of the following in the CPA-DD:</p> <ol style="list-style-type: none"> 1) Training of field personnel, 2) Provisions for maximizing response rates 3) Documenting out-of-population cases 4) Refusals 5) Other sources of non-response, and related issues.
(iii)	Analysis	The data collected from the sample size will be stored by CPA owner in record books. The data will be used by CarbonSoft to prepare monitoring report and to calculate emission reductions. For calculations of emission reductions, parameters will be used conservatively or proper justification will be given in the CPA-DD.

(c) Implementation:

S. No.	Information Head	Coverage
(i)	Implementation Plan	<p>The implementation plan will be provided in the CPA-DD for those CPAs utilizing Option 2 wherein the actual timelines of the sampling effort will be described. It will also contain a general description of qualifications and experience of personnel who will be engaged and if possible listing specific names, qualification and experience.</p> <p>The CPA implementation agencies will ensure that all recommendations provided in the Annex 4 of the Guidelines for unbiased estimates of sampled parameters will be followed.</p>



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Reliability of calculations of the entire sampling process

As per para 227 of Annex – 05, EB-69, the calculation will be reliable if the precision of the study – as defined by the t-value * standard error of the mean – is within the pre-specified reliability precision. For the PoA, this is 10% of the mean.

Formula for reliability (para 234, Annex -05, EB-69):

$$\{(1/2) * (\text{width of confidence interval}) / \text{mean}\} * 100\%$$

For ex: - if the mean CFL usage of sample lights is 3.4686 hours, and the 90% confidence interval is 3.2230 to 3.7143 hours. Reliability is therefore:

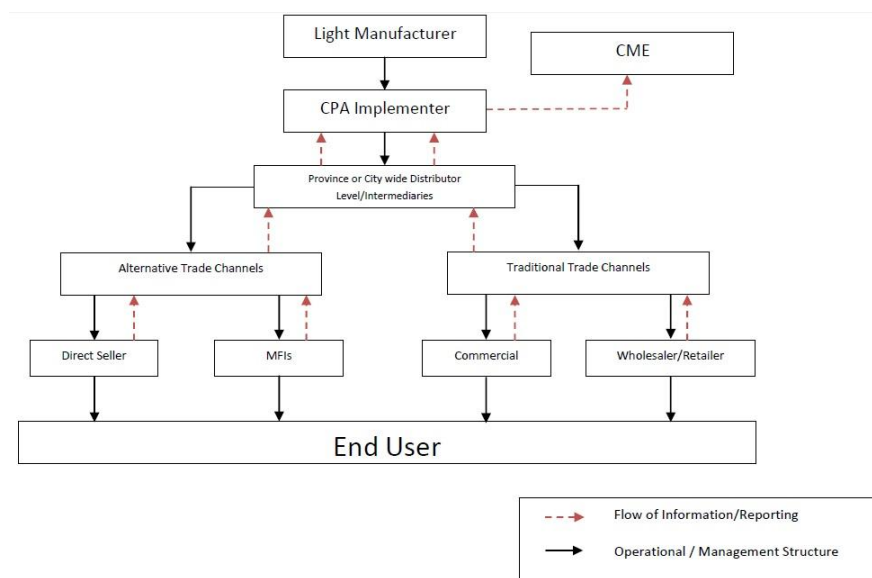
$$\begin{aligned} &=> \{(1/2) * (\text{width of confidence interval}) / \text{mean}\} * 100\% \\ &=> \{(1/2) * (3.7143 - 3.2230) / 3.4685\} * 100\% \\ &=> \{(1/2) * (0.4913) / 3.4685\} * 100\% \\ &=> 7.1\% \end{aligned}$$

Pre-specified reliability precision is 10% and relative precision is 7.1%. Hence, the data are therefore, within the required specifications.

Similar calculations will be inserted in the monitoring report for the reliability of entire sampling process.



Flow of Information



E.8 Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)

Date: 10/09/2011

Name: Mr. Sebastian Foot

Organisation: CarbonSoft Corporation Ltd. (Project Participant)



Annex 1

**CONTACT INFORMATION ON COORDINATING/COORDINATING/ MANAGING ENTITY
and PARTICIPANTS IN THE PROGRAMME of ACTIVITIES**

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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

Annex 3

BASELINE INFORMATION



Annex 4

MONITORING INFORMATION
